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A Survey on Mechanisms of Reusable Code Component Retrieval from Component Repository

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Abstract:

Modern software is more dominant of software components in the process of software development. Reuse is the primary benefit of a software component improving productivity and decreasing time, cost of implementation. The high demand of reusable software components leads to need of a mechanism to effectively store and retrieve components whenever similar functionality is required. Several researchers have proposed different mechanisms to build these storage spaces of components called as Repositories. This work intends to survey different effective retrieval methods and repositories built earlier. Also, this paper discusses various stochastic and statistical models for code reusability in software engineering. This survey will be a base to develop a user friendly and well-organized repository for retrieval of code components.

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I. Introduction

Software reuse is a promising opportunity to increase software productivity [1]. It can improve the reliability of the program. It may be useful to identify design errors at the initial level by adding unique candidate additions. However, reusing the program is not practical in its ability for several reasons. The main reason is that it requires a rich repository of the best program code snippets. So it isn't easy to successfully recover add-ons from reusable programs from the repository [2]. Existing software component recovery strategies mainly include free text strategies, previously included vocabulary techniques, signature comparison methods, behavior-based strategies, and facial category techniques [3]. Most of these techniques use language specifications based primarily on correspondence. Other current methods that mainly rely on official specifications are very complex and challenging to adapt to the user's environment. In this context, we believe in Bayer words : "The current technologies were not flexible enough to satisfy the desires of different trading conditions or were very confusing; they were no longer relevant without robust additional explanations and assistance. There is a need for flexible technology that can be adapted to assist different organizational conditions with adequate guidance and administration". Under this motivation, studies suggest a robust method for identifying reusable add-ons in software warehouse programs, which are then labeled and recovered for potential reuse. Their approach uses language in addition to the official specifications to define components and retrieve add-ons from the warehouse. The benefits of reuse is depicted in Fig 1.



Figures



References



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